

PLATE VI.

- Fig. 1. *Carinina grata*, n. gen. et sp. The brain as situated in the deeper strata of the integument, seen in horizontal section (*cf.* woodcut fig. 5, p. 81). *Br, Br*, the anterior and the posterior brain-lobes. The inner fibrous core of these lobes white; in the anterior lobe traversed by radial fibres, in the posterior one containing the ciliated canal *cc*, that opens out in fig. 2 into the cephalic groove *Cg*; *Ngc*, the nerve-cells of the brain-lobes (stretching outwards as far as the red tint is applied in the figure); *gl.br*, glandular cells connected with them; *E*, the outer layer of the integument; *G'i*, the deeper one with gland-cells; *ec* and *LM*, muscular layers; *bs*, blood-lacuna between the œsophagus and the muscular body-wall; *Oe*, lumen, *Ie*, epithelium of œsophagus; *Nc*, branches of the so-called vagus nerve.
- Figs. 2, 3. *Carinina grata*, n. gen. et sp. The posterior brain-lobe in following and preceding sections. Lettering as in fig. 1.
- In all these three figures a marked increase of the nuclei in the immediate vicinity of the cephalic groove is particularly distinct.
- Figs. 4–8. *Eupolia giardii*, n. sp. Transverse sections through different parts of the brain. Compare the figures on Pl. V. The fibrous core white, the nerve-cellular coating light red.
- Fig. 4. Section through the lower commissure, just in front of the upper commissure. *Pr*, proboscis, the innervation of which, proceeding from the two brain-lobes, is noticed in this section (*cf.* Pl. V. figs. 5, 9).
- Fig. 5. Section through both commissures, *i.e.*, a few sections further back.
- Fig. 6. A few sections still further back, through the point of origin of the vagus nerve (*Nv*). *Prs*, anterior terminal portion of the proboscidian sheath.
- Fig. 7. Section through superior, inferior and posterior lobe; the latter coated by the granular glandular cells *gl.br*, and with the ciliated canal *cc*.
- Fig. 8. In the superior lobe the fibrous core has again subdivided, giving off an uppermost stem, the centre of the outwardly visible superior gyrus (*cf.* Pl. V. figs. 5, 7).
- Fig. 9. *Eupolia giardii*, n. sp. Part of a transverse section through the œsophageal region. *cm* and *ilm*, the circular and inner longitudinal muscular layer (β and α of Pl. XI. fig. 12); *Pl*, the nerve plexus just outside the former; *Nst*, the lateral nerve-stem in this plexus; *Prs*, the proboscidian sheath with very thin walls; *dv*, the dorsal blood-vessel, situated, as are a dozen of circumœsophageal lacunar spaces (that communicate with each other), in the gelatinous tissue between body-wall and intestinal wall. *Oe*, the lumen of the œsophagus; *Ie*, its ciliated epithelium; *oe.m*, its longitudinal and circular musculature; *nep*, nephridian tubes. The thin longitudinal nerve-stem above the proboscidian sheath has been omitted in this figure.
- Fig. 10. *Eupolia giardii*, n. sp. A transverse section of the dorso-median portion of the body-wall at the furthest end of the body. *cm*, *ilm*, *Prs*, as in fig. 9. *olm*, outer longitudinal muscular layer (γ , Pl. XI.); *Bct*, the much folded primary basement layer; *g*, the deeper glandular layer of the integument; *ef*, the longitudinal and circular fibres of the same; *E*, the outer layer of the integument (*cf.* Pl. VII. fig. 5 and Pl. X. fig. 6); *bv*, dorsal blood-vessel.
- Fig. 11. *Eupolia giardii*, n. sp. Transverse section through the posterior part of the proboscis, with internal epithelium (*Pre*), longitudinal muscle-fibres (*Lm*), and external flattened epithelium (*e*).